

What Is Claimed Is:

1. A method for processing a cell suspension for autotransfusion comprising the steps of:

(a) centrifuging the suspension in a separation unit to concentrate the cells;

(b) removing the concentrated cells from the separation unit; and

(c) diluting the concentrated cells with a physiological solution.

2. The method of claim 1, wherein the cell suspension is a red blood cell suspension.

3. The method of claim 2, wherein the red blood cells are concentrated to a hematocrit of 60 to 98%.

4. The method of claim 2, wherein the red blood cells are concentrated to a hematocrit of 85%.

5. The method of claim 1, wherein the physiological solution is Lactated Ringer's solution.

6. A method for processing a suspension containing red blood cells for autotransfusion comprising the steps of:

(a) centrifuging the suspension in a separation unit to concentrate and separate red blood cells;

(b) continuously removing the concentrated red blood cells from the separation unit; and

(c) diluting the concentrated red blood cells with a physiological solution.

7. The method of claim 6, wherein the red blood cells are

concentrated to a hematocrit of 60 to 98%.

8. The method of claim 6, wherein the red blood cells are concentrated to a hematocrit of 85%.

9. The method of claim 6, wherein the physiological solution is Lactated Ringer's solution.

10. The method of claim 6, wherein the method further comprises the step of continuously removing the remaining components of the suspension from the separation unit, separate from the removal of concentrated red blood cells.

11. A device for processing cell suspensions for autotransfusion comprising at least one separation unit constructed and arranged to separate cells by centrifugation, the separation unit comprising a suspension inlet line and a concentrated cell outlet line and a waste line each located downstream of the suspension inlet line, the concentrated cell outlet line being connected to a diluting device, constructed and arranged so that cells contained in a suspension entering the separation unit through the inlet line are concentrated in the separation unit, removed through the concentrated cell outlet line, and diluted via the diluting device with a physiologic solution.

12. The device of claim 11, constructed and arranged so that the remainder of the suspension separated from the cells is removed from the separation unit through the waste line.

13. The device of claim 11, wherein the dilution device comprises a tank containing physiologic solution, in fluid connection with the concentrated cell outlet line via a solution

line, the solution line having a solution pump for controlling the flow of physiologic solution.

14. The device of claim 13, wherein the concentrated cell outlet line has a concentrated cell pump for controlling the flow of concentrated cells from the separation unit, the solution line being connected to the concentrated cell outlet line upstream of the concentrated cell pump.

15. The device of claim 14, further comprising control means, connected to the concentrated cell pump and solution pump, for controlling the flow of concentrated cells and physiologic solution.

16. The device of claim 15, wherein the device concentrates red blood cells to a hematocrit of 60 to 98 percent.

17. The device of claim 15, wherein the device concentrates red blood cells to a hematocrit of 85 percent.

18. The device of claim 15, wherein the control means controls the concentration of the diluted cells.

19. The device of claim 11, wherein the separation unit has a shape selected from the group consisting of a ring or a spiral.

20. The device of claim 11, wherein the separation unit further comprises a channel located between the suspension inlet and the concentrated cell outlet.

21. The device of claim 11, constructed and arranged to process cell suspensions collected intraoperatively.

22. The device of claim 11, constructed and arranged to process cell suspensions collected post-operatively.

23. A device for processing a suspension containing red blood cells for autotransfusion comprising at least one separation unit constructed and arranged to concentrate red blood cells by centrifugation, the separation unit comprising a suspension inlet connected to a suspension inlet line having a suspension pump, a red blood cell outlet connected to a red blood cell outlet line having a red blood cell pump, and a waste outlet connected to a waste outlet line;

a dilution device comprising a physiologic solution tank and a solution line having a solution pump, the solution line providing fluid connection between the physiologic solution tank and the red blood cell outlet line, the connection between the solution line and the red blood cell outlet line being upstream of the red blood cell pump; and

a control unit connected to the red blood cell pump and solution pump, wherein the control unit is constructed and arranged for controlling the flow and mixing rate of concentrated red blood cells and physiologic solution;

wherein red blood cells contained in a suspension entering the separation unit through the suspension inlet are concentrated in the annular channel, removed through the red blood cell outlet line, and diluted with physiologic solution.

24. The device of claim 23, wherein the remainder of the suspension is removed through the waste line.

25. The device of claim 23, wherein the red blood cells are concentrated to a hematocrit of 60 to 98 percent.